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Point of Maintenance Hurlburt Initial Structured Study Test Report

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FOR THE COMMANDER

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This document describes the usability test conducted by the Air Force Research Laboratory, Logistics Readiness Branch (AFRL/HESR) and the University of Dayton Research Institute (UDRI) to assess user performance with the Point of Maintenance (POMX) system for maintenance data collection on the flightline. This test consisted of observations of task performance in baseline Corps Automated Maintenance System (CAMS) and batch POMX conditions, and feedback questionnaires about the usability of both the baseline and test devices. The purpose of the evaluation was to compare the POMX device with the current CAMS system for maintenance documentation (i.e., opening work orders, ordering parts, and closing work orders). The POMX device used was the Intermec 710, and the CAMS system consisted of a standard desktop computer using CAMS "green screens." Both systems were connected to live databases. The POMX system was designed to allow for both a live mode whereby transmissions could be made via radio frequency (RF), and a batch mode whereby the hand-held device needed to be placed into a cradle for interaction with the POMX server. In both of these modes, however, the design provided for portions of the POMX database to be loaded onto the device prior to its use. The design allowed for U.S. Air Force personnel to use the devices in a flightline-type setting to simulate opening work orders, ordering parts and closing work orders.

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Preface

The research documented in this technical report was performed under the Technology for Readiness and Sustainment (TRS) contract, F33615-99-D-6001. Delivery Order 14, for the Air Force Research Laboratory, Human Effectiveness Directorate, Logistics Readiness Branch (AFRL/HESR). The work was performed by the University of Dayton Research Institute, Dayton, OH and NCI Information Systems, Inc., Fairborn, OH. The period of performance for this task was April 2002 through March 2003. Capt. Matthew W. Goddard was the technical monitor for this effort.

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1 Introduction

This document describes the usability test conducted by the Air Force Research Laboratory and the University of Dayton Research Institute to assess user performance with the Point of Maintenance (POMX) system for maintenance data collection on the flightline. This test consisted of observations of task performance in baseline Corps Automated Maintenance Systems (CAMS) and batch POMX conditions, and feedback questionnaires about the usability of both the baseline and test devices. The purpose of the evaluation was to compare the POMX device with the current CAMS system for maintenance documentation (i.e., opening work orders, ordering parts, and closing work orders). The POMX device used was the Intermec 710, and the CAMS system consisted of a standard desktop computer using CAMS "green screens." Both systems were connected to live databases. The POMX system was designed to allow for both a live mode whereby transmissions could be made via radio frequency (RF), and a batch mode whereby the hand-held device needed to be placed into a cradle for interaction with the POMX server. In both of these modes, however, the design provided for portions of the POMX database to be loaded onto the device prior to its use. The design allowed for U.S. Air Force personnel to use the devices in a flightline-type setting to simulate opening work orders, ordering parts and closing work orders.

This test was designed to address several functions from the Functional Requirements Document (Point of Maintenance (POMX) FY01, Functional Requirements Document, Revision: 1b, May 8, 2001). These functional requirements include: 3.3.3/2, which requires the POMX device to operate in both a standalone mode and via a RF or LAN, and 3.3.7/1, which requires the POMX device to have an adequate display size.

While the design of POMX and this evaluation were intended to handle opening jobs, ordering parts, and closing work orders, at the time of the evaluation the first year software and hardware configuration was unable to handle ordering parts and closing work orders in either the batch or live modes. During the first day of testing, the evaluation team and the Hurlburt system administrators were unable to get the database to download onto the POMX device. On the second day, two of the devices loaded the necessary POMX database files onto the device; however, other problems emerged. Problems with RF connectivity prohibited the use of POMX devices in the live mode. Additionally, there were problems with first year software designs for drop down menus in the forms for parts ordering and closing work orders. Some of the drop down menus took between several to 20 minutes to actuate. The evaluation team determined that this software problem was unacceptable, and re-scoped this study to include a limited number of conditions (based on those functions that were deemed to be working properly).

Given the problems discussed above, the conditions tested included CAMS open work orders, CAMS order parts, CAMS close work orders, and POMX open work orders. This report will focus only on the differences and similarities between the CAMS open work order and POMX batch mode open work order conditions. The intent is to return at a later date, after Year 2 POMX software is installed and evaluate the POMX live open work order, order parts, and close work order, and batch order parts, and close work order conditions. These POMX conditions will be compared to the CAMS conditions tested during the current evaluation.

During the testing period, other observations were made concerning the usefulness and usability of the Year 1, existing POMX system. These observations are summarized in the Summary and Key Findings section of this report.

1.1 Objectives

This usability test was designed to address the following usability issues:

- For opening jobs, ordering parts and closing jobs on the flightline, how does mode of operation (real-time with POMX, batch with POMX or baseline without POMX) affect performance? **NOTE: due to system and software problems the only POMX objective met by the current test was for opening jobs on the flightline in a batch mode.**
- Which mode of operation do users prefer? **NOTE: due to system and software problems the only preference information gathered was relative to the POMX batch mode for opening work orders in comparison with opening work orders with CAMS.**
- Is information presented on POMX device readable and usable?

1.2 Test Methodology

Usability test methods applied in the current evaluation are based on principles outlined by Dumas and Redish (1993). In accordance with these usability testing methods, design of the study included three steps (see Figure 1). First, the major usability issues were identified. These included concerns about the general hardware use (e.g., the ability of the device to operate in a standalone or connected mode). From these general concerns, specific concerns were identified (see the objectives above). Finally, methods for collecting information relevant to these concerns were identified. Methods included multiple metrics for each concern (e.g., collecting time measurements for completion of specific trials, and collecting subjective information).

Using this method, once the data is collected, data analysis leverages the strength of triangulating the information gathered for each specific concern. For example, the specific concern dealing with how mode affects performance included use of three metrics: subject ratings, experimenter observations of the participant while using the device, and specific participant comments (both written and verbalized, during the test and in post-test discussions). Using triangulation, each metric is used to confirm findings of another metric so that if all three metrics identify the same issue, the strength of usability concern is increased. Similarly, as multiple participants identify the same usability problem, the usability problem is revealed. Methods used to analyze results are fully addressed in the Results section of this document.

In identifying usability concerns, research indicates that the number of participants need not be as high as tests aimed at determining significance (e.g., ANOVAs, or tests of correlation). Virzi (1992) identifies that 4 to 5 subjects identify 80% of the usability problems with a system, and that additional subjects are less likely to identify any new problems. The current test was not only aimed at looking at the usability of the system but on statistical comparison of performance, therefore 12 subjects were used. Given this number of participants, the study should be considered to be of relatively high strength in identifying usability concerns for the devices tested.

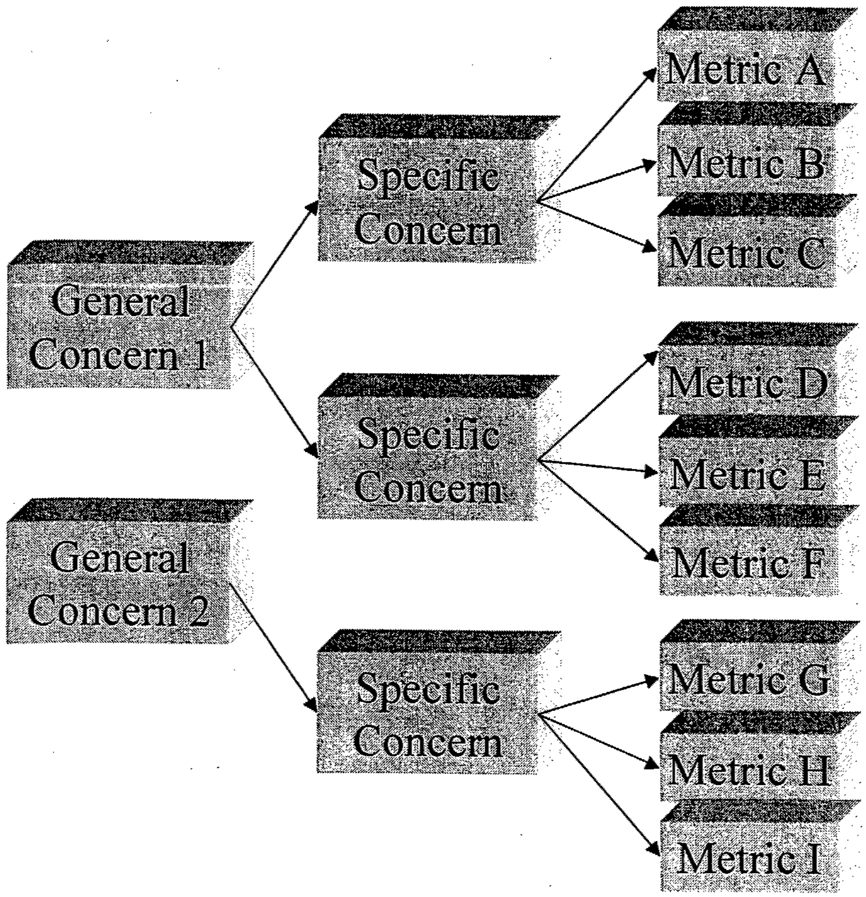

Figure 1. Usability testing methods (Dumas and Redish, 1993)

2 Method

2.1 Participants and Facility

Twelve U.S. Air Force personnel at Hurlburt Field served as participants. These individuals were assigned to the 16th Aircraft Maintenance Squadron (AMXS). All participants were Communication/Navigation specialists. Testing was conducted at the 16th AMXS, Hurlburt Field, FL.

2.2 Time and Schedule

The testing was conducted from 4 November through 7 November 2002. Pre-testing occurred on the first day and consisted of assuring that appropriate software was loaded on the hardware devices, and re-evaluating all scenarios to verify that the same types of manipulations were required across devices. Subjects were scheduled on a non-interference basis; that is, scheduling was arranged based solely on availability, so as not to interfere with subjects' regular work. Testing on all four days lasted for most of the day (morning and afternoon).

2.3 Test Equipment Requirements

Hardware used in the test included the items listed below.

1. Intermec 710 handheld device with POMX software
2. Extra batteries for Intermec 710
3. Battery charger for Intermec 710
4. Standard CAMS workstation configured with CAMS "green screens"

2.4 Data Collection Packet

Data collection packets included a variety of forms. Each subject was given a complete packet at the beginning of the test and completed all forms prior to the end of the test.

1. Checklist
2. In briefing
3. Consent form
4. Pre-test questionnaires
5. Post-condition questionnaires
6. Post-test questionnaires

2.5 Data Collection Team

The data collection team consisted of five individuals: 1) two experimenters, 2) a subject matter expert, 3) a videographer, and 4) a study coordinator. The experimenters conducted the in briefing and out briefing sessions and administered the questionnaires. The subject matter expert provided the majority of the interaction with test participants. The videographer operated a video camera in order to record participants' actions. The study coordinator was responsible for assuring that scheduling was completed for all participants, that all hardware and software were available for the test, and that in-briefing and out-briefing sessions were conducted for each participant.

2.6 Pre-Test Requirements

Several activities needed to be completed prior to beginning this test. Some of these activities were accomplished prior to arrival at Hurlburt; others were completed during the pre-test (the first day of testing). Most of these activities required coordination with the hosting facility.

1. Experimenters required time to view the POMX software. This software was loaded on the handheld devices several months prior to this test and experimenters reviewed the software with system developers several weeks prior to the test.
2. Experimenters required time to review the features of the Intermec 710 so that they would be familiar with the device prior to the test. This was accomplished during the pre-testing day.
3. Experimenters created and finalized scenarios for the subjects to use during the test. Scenarios were developed several weeks prior to the test and finalized on the pre-testing day.
4. Experimenters were granted clearance to take photos at Hurlburt Field. Videotaped data and digital photos were captured during the test.
5. Experimenters required use of an aircraft parking spot on the flightline for testing.

2.7 Test Procedure

Test participants were provided an in briefing in a conference room setting. This in-briefing provided an overview of the purpose of the test. At this time they also completed the consent form, and completed the pre-test questionnaire. The study's original design included counterbalancing of subjects across conditions to address the possibility of order effects. However, due to early trouble initializing the POMX database, counterbalancing was abandoned. Instead, each participant started with the baseline condition (no POMX). Participants began the baseline condition at an area just outside the 16^{th} AMXS facilities. While at this area, participants simulated entering maintenance data relevant to an aircraft inspection. Once the simulated data entry task was completed participants walked into the 16^{th} AMXS facilities and used a CAMS terminal to complete the appropriate documentation for the simulated inspection. After the participants performed and documented three simulated data entry tasks (i.e., open job, order parts, and close job), they were asked to fill out a post-condition questionnaire. Time measurements were recorded for each of the three times each participant took part in the baseline condition. Time measurements were also recorded to determine each subject's average travel time to the nearest aircraft parking space. These time measurements documented both actual maintenance data entry task time and travel time required as part of the trial.

Following the completion of the baseline condition, each subject used the POMX device in a batch condition in order to open a job. Prior to beginning this batch condition, each participant received training on the POMX device. Once trained on the device, participants initiated the simulated inspection task and the subsequent data entry task (i.e., opening a job) from the same area in which they had begun the baseline condition. From this starting point, participants walked to the aircraft parking spot that was closest to the 16^{th} AMXS building. Once the participants arrived at the aircraft parking spot they simulated the inspection of an aircraft. Upon completion of the simulated inspection participants used the POMX device to open a job for the inspection. Once the job was successfully opened participants walked back to the starting area. Following this process participants were asked to fill out a post-condition

questionnaire and a post-test questionnaire. Time measurements were recorded for the POMX batch condition. Again, these time measurements documented both actual data entry task time, and travel time required as part of the trial.

3 Results

The data presented in the results section of this report compares the POMX condition and the baseline CAMS condition for only one of the three critical functions of the POMX system, that of opening a work order. The other two critical POMX functions, ordering parts and closing work orders were not operating sufficiently to be evaluated at the time this testing was conducted. Therefore, it is important to note that these data do not reflect an overall evaluation of the POMX system or its acceptability and usefulness in its current state. Instead, these data show the comparison of one functioning aspect of the system with the currently utilized CAMS terminal system. For a summary of additional key findings, observations, and recommendations regarding the entire POMX system at the time of testing please see the Summary and Key Findings section at the end of this report.

Analysis of the data collected during this study included direct comparison of actual trial time required to complete specific maintenance activities, as well as subjective evaluations of both the POMX system and the CAMS system. These analyses are detailed in the following sections. It is important to note that a triangulation method was used in the analysis of findings for each device. Triangulation was implemented as defined in the following paragraphs.

Participants completed various trials (e.g., the open job, order parts, and close job tasks) associated with aircraft maintenance in two different conditions: the CAMS open work order, order part and close work order conditions (which simulated their typical task experience) and the POMX open work order condition (which utilized a handheld device to allow remote completion of the above maintenance tasks). The completion times for these trials are discussed in the analysis.

A comparison was made between the relevant completion times for the various maintenance activities. While three maintenance tasks were completed in the CAMS condition, only the 'open job' task was completed in the POMX condition. Thus, the trials times associated with opening a job were compared across the two conditions.

Ratings for both devices were gathered for each item in the questionnaire (e.g., for each question), and mean ratings and standard deviations were then calculated on each item for that device. Ratings could range from 1 to 5 (a rating of 1 was considered a positive response and a rating of 5 was a negative response).

A priori, criteria were set that 1) any item with an average rating of ≥ 3 indicated a usability problem, and 2) any item where the total of the average rating plus standard deviation was ≥ 3 indicated a potential usability problem.

Once this initial analysis was complete, user ratings were plotted on a cluster graph for items that indicated usability problems or potential usability problems. User comments and observer notes were then analyzed and collapsed to assist in the definition and clarification of the problem or potential problem. That is, user comments and observer notes that related specifically to the item were added to the analysis to assist in further definition of the problem or potential problem.

3.1 Objective Results

In this study, participants completed maintenance data entry tasks in a baseline condition – a condition that replicated the manner in which the aircraft maintenance data collection is

currently completed – and then completed one identical data entry task (i.e., open job) in the POMX condition. Start and stop times were recorded for each of these trials. The time required to complete the open job task in each condition was then compared for each subject.

Statistical analysis of this time data shows that the POMX condition shows significant time improvements over the CAMS condition. This was explored using a dependant samples t-test conducted on the total trial time for the open job task in the baseline and POMX conditions.

For the first comparison, only the actual times to complete the trial were compared. This excluded the time required for the maintainer to travel from the aircraft to the CAMS terminal, and the time required to return to the aircraft after receiving a response from the CAMS system. As hypothesized, maintainers took more time to complete the open job task in the CAMS condition than in the POMX condition [$t(11) = 2.115$, $p<.05$]. In the POMX condition, participants spent an average of 0:05:41 completing the open job task, while in the CAMS condition participants spent an average of 0:08:13 completing the open job task.

To include travel times in the calculation, experimenters recorded the time required for each maintainer to travel from the CAMS terminals to the nearest aircraft parking location (approximately 300 feet). This time was recorded at least twice for every participant – three times for most – and these times were averaged to determine a subject's travel time to include for calculations in this study. It should be noted that these were travel times to the nearest aircraft parking location. A small sample of travel times to the most distant aircraft parking location was also gathered for informational use, but was not used in comparing the baseline and POMX conditions.

As hypothesized, the time required to complete the trial in the POMX condition was significantly less than the time required in the CAMS condition when time to complete the entire trial was considered [$t(11) = 4.173$, $p<.01$]. The POMX condition showed the same average of 0:05:41 to complete the open job task. The CAMS condition showed an average of 0:10:46 to complete the open job task when travel to and from the aircraft to interact with the CAMS system was included in the calculation. Figure 2 shows a comparison of average POMX and CAMS trial times, both with and without travel times.

Time Comparision

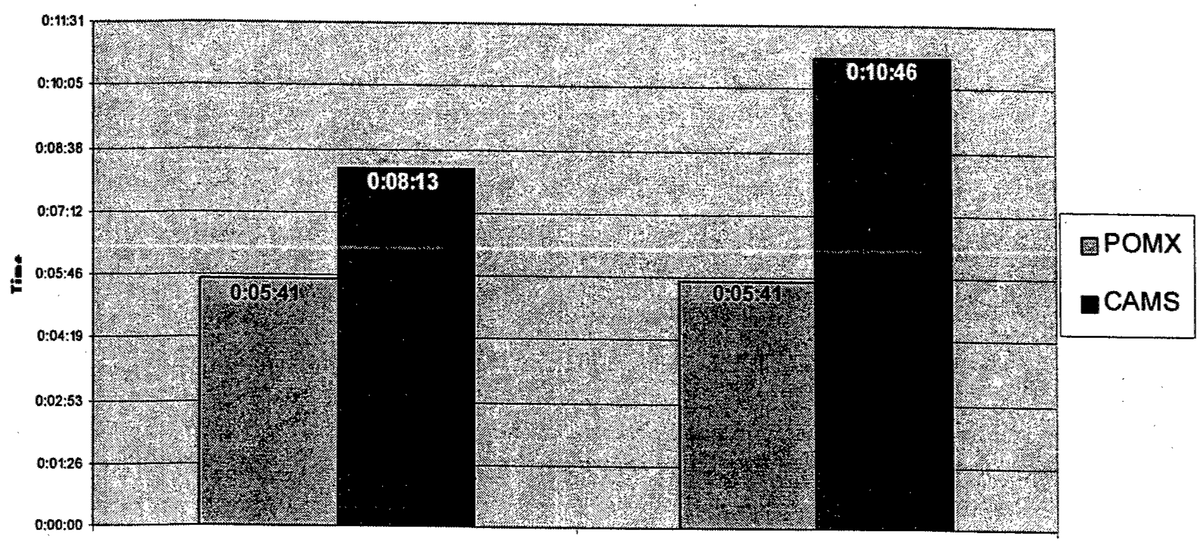

Figure 2. Average Trial Times for the Baseline and POMX Conditions

3.2 Subjective Results

Participants completed maintenance data collection activities (i.e., open job, order parts, close job) as an initial baseline. During these trials, subjects maintained the normal sequence for activities associated with performing the inspection of the aircraft. Participants later completed the "open job" maintenance data collection activity in the POMX condition.

After completing the maintenance tasks in each condition, participants rated each device across a series of elements using a 5-point scale, where one was positive and five was negative. Participants rated the acceptability of each device for such characteristics as:

- display size,
- computer size,
- pointing device,
- keyboard layout,
- ease of navigating,
- ease of using drop-down menus, and
- frustration level when using the device.

Additionally, participants rated the Intermec 710 (the POMX device) across another four elements specific to the use of a handheld device when entering data on the flightline; these additional elements included ruggedization, ease of using the onscreen keyboard, reading data, and perceived portability.

In all categories, average ratings for the POMX condition were in the acceptable range; that is, the average rating in each category was not greater than or equal to three. Based on this rating, it is concluded that there were no demonstrated usability problems in the POMX condition. Furthermore, the average rating plus the standard deviation remained within this acceptable range across all categories in the POMX condition; this indicates that no potential usability problems were revealed in the POMX condition in this study (Figure 3, Figure 4).

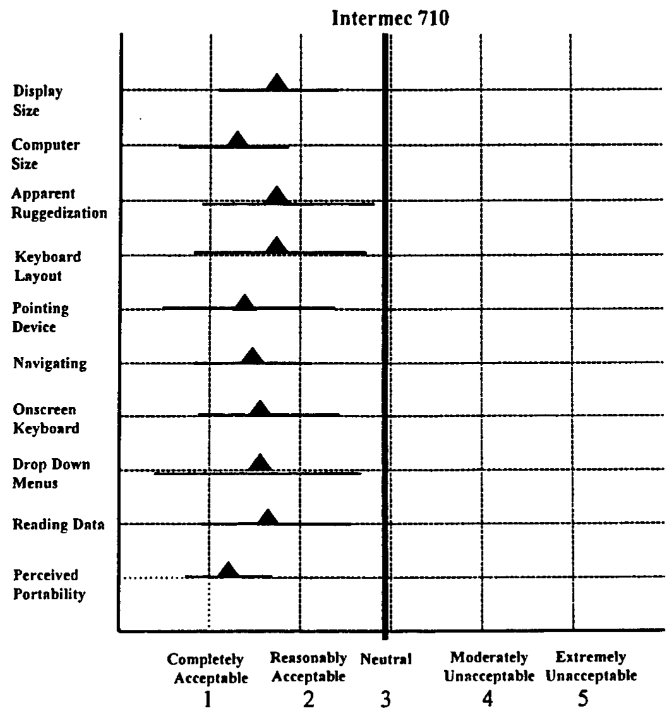

Figure 3. Means and Deviations - Acceptability Ratings for the POMX Condition

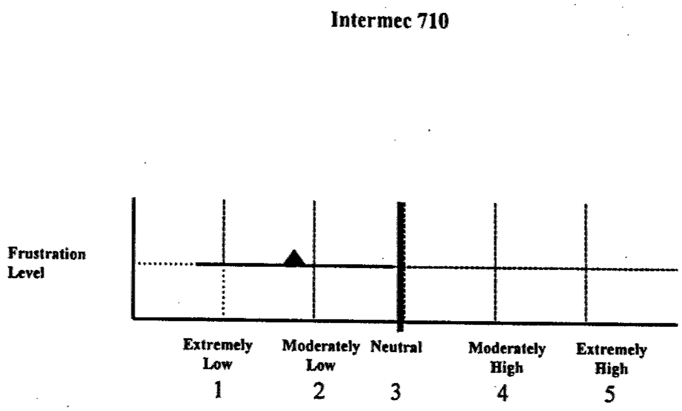

Figure 4. Means and Deviations - Frustration Ratings for the POMX Condition

In the baseline/CAMS condition, the average ratings in each category were in the acceptable range, indicating no demonstrated usability problems with any of the items rated in the baseline condition. However, the calculation of the average rating plus standard deviation revealed two potential problems in the baseline condition (Figure 5, Figure 6).

Average Ratings for Paper/CAMS

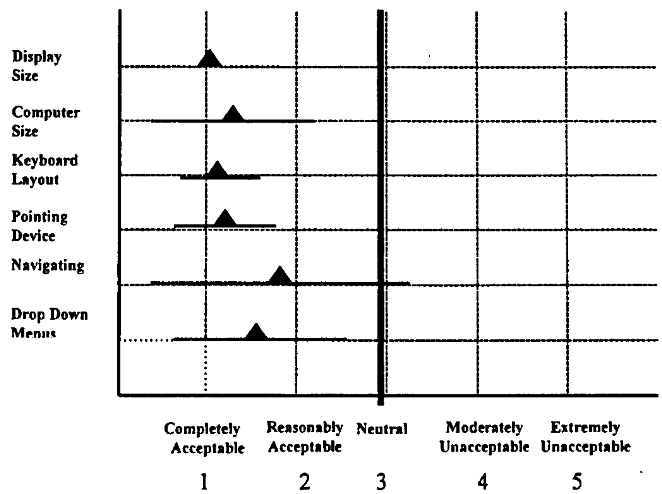

Figure 5. Means and Deviations - Acceptability Ratings for the Baseline Condition

Average Frustration Level Rating for Paper/CAMS

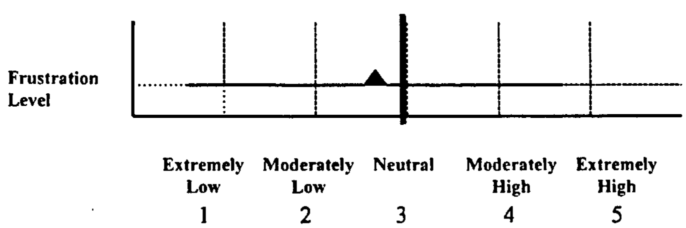

Figure 6. Means and Deviations - Frustration Ratings for the Baseline Condition

Both the Ease of Navigation and Frustration Level categories showed ratings whose deviation extended into the unacceptable range. Individual ratings for these usability categories are illustrated in Figures 7 and 8.

Individual ratings of navigation in the baseline condition indicated a potential problem. While ten participants provided ratings in the acceptable range, one participant rated navigation using paper and the CAMS system as Moderately Unacceptable, and another participant rated this as Extremely Unacceptable (Figure 7). Experimenters noted that participants had some difficulty navigating within CAMS for various reasons. Some participants experienced problems logging into CAMS: several participants either lacked a valid login and password, or received an error when they input their existing login and password. Also, while some subjects in this study were highly experienced using CAMS, other participants had a lack of experience – and thus familiarity – with CAMS.

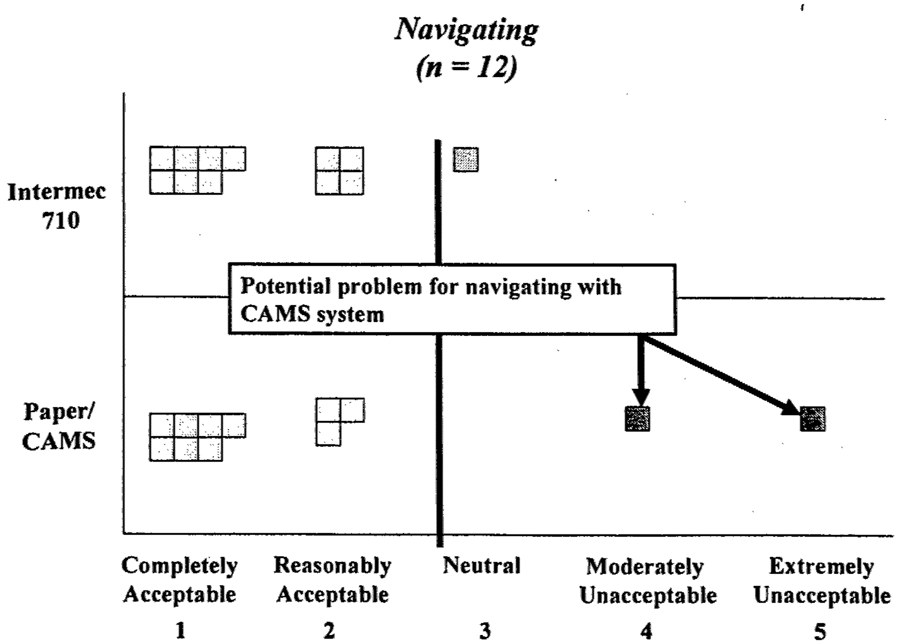

Figure 7. Individual Ratings for Navigating in the POMX and Baseline Conditions

The indication of a potential problem with the frustration level in the baseline condition may be partially influenced by the difficulty participants expressed with navigating the CAMS system. Only five participants provided ratings in the acceptable range when asked about their frustration level in the baseline condition. Five participants rated their frustration levels as Neutral, and two additional participants rated their frustration levels as Extremely High (Figure 8). In addition to the difficulties with CAMS mentioned above, it was noted that some participants had difficulty finding an available, functioning CAMS terminal, or the system may have frozen while they were using it. In some cases, the CAMS system rejected information that

had been entered, and participants were required to complete the process again. Experimenters noted that, while participants did experience some delay and difficulty navigating when using the CAMS system, this reported frustration level could easily reflect users' long-term experiences with the system, and not simply their experiences during this test. For example, these ratings could reflect, in part, the long data entry sessions often associated with users' experience with CAMS.

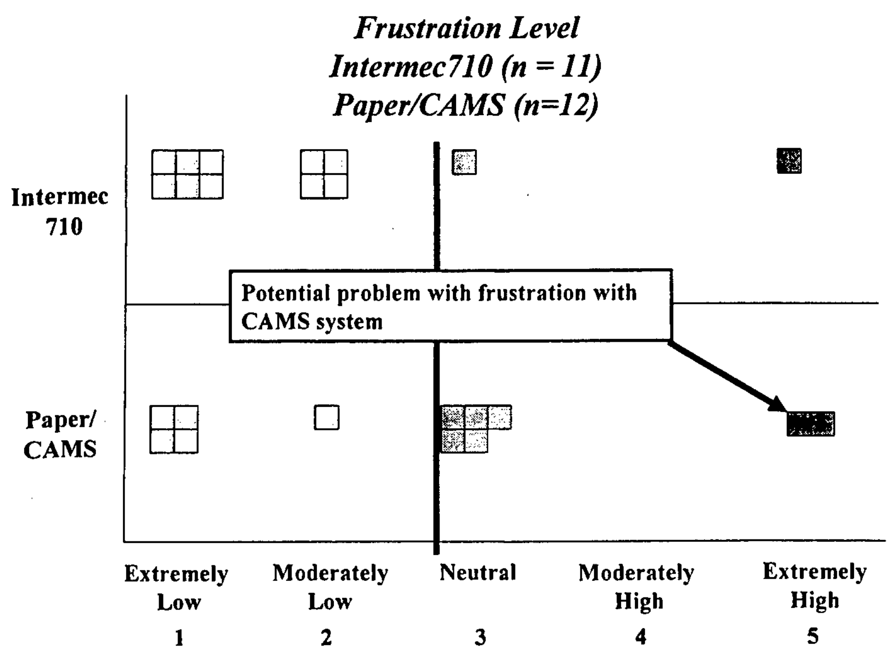

Figure 8. Individual Ratings for Frustration in the POMX and Baseline Conditions

4 Discussion

The purpose of this study was to provide subjective and objective data, based on standard usability testing methods, comparing the usability of the POMX system and device for opening work orders in a batch mode to the current maintenance methodology that utilizes paper and the CAMS system for opening jobs.

From the standpoint of objective data, it was hypothesized that the POMX condition would show significant improvements in the time required to complete maintenance at the aircraft – that is, at the point of maintenance. The current method for completing this maintenance requires that the maintainer, upon finding a problem, complete paper documentation at the aircraft, then proceed indoors in order to use the CAMS system. The maintainer signs in to the CAMS terminal (this particular step has been shown to be somewhat annoying to the user), opens the maintenance job, fills out the necessary fields within the system and sends the job, and then waits for a response from the CAMS system with a Job Control Number (JCN). At this point, the maintainer signs out of the CAMS system, returns to the aircraft, and documents the JCN in the aircraft's paper maintenance forms. In the POMX batch condition, maintainers can remotely access information from the CAMS database using an electronic handheld device. Thus, the maintainer completes the paper documentation at the aircraft, and fills out the necessary screens, upon returning to the shop the job can be downloaded to the POMX database and subsequently to CAMS automatically.

It should be noted that the CAMS condition in this study was configured to represent the best possible scenario for quick entry of maintenance data collection utilizing the CAMS system. The simulated maintenance tasks occurred at the closest possible aircraft parking location, the maintainer went directly from the aircraft into the building where he updated the CAMS terminal and received the response (i.e., the JCN), and then the maintainer proceeded directly back to the aircraft (in the nearest aircraft parking space) to update the aircraft documentation. In ordinary maintenance activities, the aircraft requiring maintenance is often *not* in the nearest aircraft parking location, and the maintainer often does not enter data into CAMS until the end of his shift. Thus, maintenance data in CAMS may not actually be updated for up to eight hours, and the maintenance information at the aircraft will not be current until after the maintainer has received a response from the CAMS system, and then updated the documentation at the aircraft.

Even so, this study did show significant time savings in the POMX condition as compared with the CAMS condition. It is interesting to note that, even when the necessary travel time required in the CAMS condition was excluded, the POMX condition required less time than did the CAMS condition. This supports the subjective feedback recorded through user ratings that POMX was more usable than CAMS for this particular maintenance data collection activity. Whereas the POMX condition was rated in the acceptable range in all usability categories, the CAMS condition exhibited potential problems with navigation and frustration level. Based on other user feedback and experimenter observations, it is likely that the sometimes-lengthy response time of the CAMS system lends to frustration with the system. Still, other issues – such as login difficulties, and difficulty navigating often confusing screens to access necessary data – are likely to be equally responsible for the reported frustration with the CAMS system.

5 Summary and Key Findings

The comparative measurements taken during this study indicate that there are potentially tremendous gains to be made in the efficiency of maintenance task documentation and the associated documentation. For this study, the time savings found when travel time was incorporated into CAMS entry trial times were, as anticipated, significant. Additionally, even when the necessary travel time was excluded, the POMX condition required less time than did the CAMS condition. Average travel time was determined based on the location of the nearest aircraft parking location. Two additional time samples were recorded to document travel time to the farthest aircraft on the 15th AMU flightline at Hurlburt. Given that travel time will vary widely based upon the flightline size of various installations, it should be noted that flightline size should clearly be considered when estimating the potential time savings a unit might gain by incorporating devices that might be utilized to interact with necessary maintenance systems from the point of maintenance.

As noted in the Introduction, a complete test of the POMX system was not possible during this testing period. Therefore, the test was re-scoped to include only a limited number of conditions. This report has focused on providing results of that limited test. It is important, however, to report overall key findings as they relate to the total POMX capability. The intent of reporting these findings is to provide feedback to POMX designers for design modifications that will address these issues. These overall findings are identified in the paragraphs below.

A key finding revealed the first day was the fact that when jobs are entered in CAMS through a regular CAMS terminal, those same jobs do not show up and cannot be accessed in the POMX system. This may be due to the fact that CAMS and POMX do not synchronize frequently enough. Even if the POMX software and the RF systems were all functioning at optimal rates, this would be a serious condition that must be addressed. When personnel use the POMX device they should be able to access any and all jobs that are currently open in CAMS.

Another key observation was that during the parts inquiry with the handheld device, the drop down box with QRLs could not be scrolled left or right and therefore the nomenclature of the aircraft parts that corresponded with the visible QRL number, were not visible. Without the nomenclature of the part, the QRL is of no value to the user. When the parts NSN were entered (defeating the purpose of the QRL), the system returned the QRL numbers.

To summarize the overall findings of this testing, the observations produced good data for the baseline CAMS condition and identified numerous software problems with the year-one effort. The following list indicates the observations of this test in the order of importance based on the opinion of the testing team.

1. CAMS-POMX data synchronization does not occur often enough (should be real time).
2. Wait time for drop down menus (for instance accessing work center data when ordering parts) is unacceptably long (up to 20 minutes).
3. Variation of signal strength is affecting system performance.
4. Server availability (functionality) is intermittent and not reliable enough for continued daily use.
5. Daily database table updates are not reliable (usually only 2 or 3 devices out of 16 would update properly or “refresh” each morning).

These key areas must be improved before a complete objective test of the POMX system can be accomplished. After the identified problems are corrected and a fully functional POMX system is available, it is recommended that the AFRL team return to Hurlburt Field and re-take the time measurements for the POMX system based on direction from HQ AF/ILMM.

This study lays excellent groundwork for future studies addressing the usability and efficiency of current and proposed POMX maintenance information systems. All baseline data for the open job, order parts, and close job tasks was collected for the CAMS condition, and each of these areas are valid areas for comparison with alternate maintenance systems. It is recommended that the study be conducted again when the functionality of the POMX database is such that other tasks might be executed and compared with the existing system. That is, after Year 2 software is installed it is recommended that further testing of the POMX system be conducted. Specifically the POMX live open work order, order parts, and close work order conditions should be tested as well as the POMX batch order parts and close work order conditions. Only this thorough testing approach will truly reveal potential savings offered by a POMX capability.

6 References

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